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(54) **TONER CARTRIDGE IDENTIFICATION SYSTEM FOR A PRINTER**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(57) **ABSTRACT**

An apparatus for communicating to a printer a type of installed printer cartridge, where the combination of the cartridge and the printer form a magnetic coupling that can generate a cartridge specific code to identify the toner cartridge as being of a predetermined type. In a preferred embodiment, the magnetic coupling is achieved using at least two reed switches preferably mounted on the printer, with the reed switches biased using fixed magnetic elements placed immediately adjacent the reed switches. In the absence of any further magnetic fields, the reed switches are selected to provide a known set of switch positions corresponding to a bit value of one ("1") for an open circuit and a bit value of zero ("0") for a closed circuit. Magnetic elements on a printer cartridge are positioned to be disposed adjacent the reed switches and opposite the fixed magnets, and of a size and field strength sufficient to counteract the fixed magnetic elements adjacent the reed switches when the cartridge is inserted into the printer. The positions of the reed switches on the printer may be transformed into a sequence of bits of "1"s and "0"s. This series of data (ones and zeros) can be used to distinguish one printer cartridge from another and allow automatic optimization of the printer settings based on the cartridge recognition.

10 Claims, 2 Drawing Sheets